

Topic 4.3  
Multiplying Matrices  
Homework

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Determine the dimensions of each matrix product.**

1.  $A_{2 \times 3} \cdot B_{3 \times 5}$

2.  $G_{4 \times 7} \cdot C_{7 \times 1}$

3.  $M_{2 \times 2} \cdot N_{3 \times 2}$

**Multiply the following matrices, if possible.**

4.  $\begin{bmatrix} 2 & 3 \\ 4 & 7 \end{bmatrix} \cdot \begin{bmatrix} 6 & -8 \\ 12 & -5 \end{bmatrix}$

5.  $\begin{bmatrix} 13 \\ 5 \\ 8 \end{bmatrix} \cdot \begin{bmatrix} 6 & \frac{2}{10} & \frac{11}{4} \end{bmatrix}$

6.  $\begin{bmatrix} 9 & 8 \\ 4 & 3 \\ 5 & 6 \end{bmatrix} \cdot \begin{bmatrix} -10 & -2 \\ -3 & -4 \end{bmatrix}$

7.  $\begin{bmatrix} -5 & 12 \\ 8 & -3 \\ -9 & -6 \end{bmatrix} \cdot \begin{bmatrix} 3 & -2 \\ -5 & 1 \\ 4 & 3 \end{bmatrix}$

8.  $\begin{bmatrix} 1 & 3 \\ 5 & 7 \end{bmatrix} \cdot \begin{bmatrix} 2 & -6 & 10 \\ 4 & -8 & 12 \end{bmatrix}$

**Solve the following matrix multiplication word problems.**

9. On two days, a store sold the following amounts of pencils, erasers, and binders.

	Pencils	Erasers	Binders
Monday	48	7	9
Tuesday	54	10	6

If the price for each pencil, eraser, and binder, respectively, is \$0.20, \$0.35, and \$2.85, how much was made each day?

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10. Old MacDonald has three fruit farms. On these farms he grows peaches, apricots, plums, and apples. When picked, the fruit is sorted into layered boxes in which they will be sold. The chart below shows the number of boxes for each type of fruit.

Location	Peaches	Apricots	Plums	Apples
Farm1	152	225	395	277
Farm 2	236	183	245	183
Farm 3	95	132	0	285

Suppose he sells peaches for \$27 a box, apricots for \$15 a box, plums for \$34 a box, and apples for \$17 a box. Find the income for each farm. How much will he make *total*?

11. In a three team track meet, the following numbers of 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> place finishes were recorded.

School	First Place	Second Place	Third Place
Lee	4	10	6
Central	7	6	9
Clarke	8	3	4

If 5 points are awarded for 1<sup>st</sup>, 3 points for 2<sup>nd</sup>, and 1 point for 3<sup>rd</sup>, determine who won the track meet.